

USSR

MATVEYEV, V. V. et al., Problemy Prochnosti, No 4, Apr 73, pp 8-14

with temperature. Exceptions are noted and explained. A diagram is given comparing the logarithmic decrement for these materials at normal and maximum working temperatures. An examination of this diagram shows that steels of the martensite and martensite-ferrite classes with pronounced magnetomechanical hysteresis (DI-5, EZh1, EI961) have the best damping properties at normal and working temperatures not exceeding 600°C. Titanium alloys showed the poorest damping properties.

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- 67 -

I/2 032 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DETERMINATION OF THE DECREMENT OF VIBRATIONS DURING AUTOMATIC
RECORDING OF THE NUMBER OF CYCLES -U-
AUTHOR--(02)-MATVEYEV, V.V., CHAYKOVSKIY, B.S.
COUNTRY OF INFO--USSR
SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, MAR. 1970, P. 42-46
DATE PUBLISHED----MAR70
SUBJECT AREAS--PHYSICS, METHODS AND EQUIPMENT
TOPIC TAGS--VIBRATION MEASUREMENT, VIBRATION DAMPING, AUTO RECORDER, DATA
RECORDING, ERROR ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1387 STEP NO--UR/3663/70/002/000/0042/0046
CIRC ACCESSION NO--AP0125035
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0125035

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A DEVICE FOR
AUTOMATIC RECORDING OF THE NUMBER OF VIBRATION CYCLES IN A GIVEN
INTERVAL OF A CHANGE IN THE AMPLITUDE OF DAMPED VIBRATIONS. SPECIAL
ATTENTION IS GIVEN TO THE EVALUATION OF ERRORS ARISING IN THE
DETERMINATION OF THE LOGARITHMIC DECREMENT. THESE ERRORS ARE DUE TO
(1) AVERAGING THE DECREMENT VALUE WITH RESPECT TO AMPLITUDE, AND (2)
INACCURACY IN RECORDING THE NUMBER OF VIBRATION CYCLES.
FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT PROBLEM PROCHNOSTI,
KIEV, UKRAINSKOI SSR.

UNCLASSIFIED

USSR

SOTNIKOV, V. G., RED'KIN, V. S., ZASHKVARA, V. V., CHAYKOVSKIY, E. F., KORSUNSKIY, M. I.

"Decrease in Carbon Concentration in Surface Layers of Mo_2C and W_2C "

Leningrad, Fizika Tverdogo Tela, No. 4, Apr 71, pp 1058-1061

Abstract: The characteristic energy loss spectrum of Mo_2C and W_2C samples was studied by the method of reflecting a primary beam of electrons of 800 eV energy for two scattering angles 39 and 141°. The samples were made by high-temperature heating of polycrystalline strips of pure Mo and W in benzene vapors. In taking the spectra the samples were heated up to 800, 1250, 1600, 1800, and 2000°C in a vacuum of 10^{-6} torr. It was established that an increased concentration of hydrogen is contained in the surface layer in the initial samples. In the process of high-temperature heating of the samples there is observed desorption of carbon from the surface layer, with the result that the concentration composition of the surface layer approaches the pure metal (Mo, W). When the temperature is raised to 2000°C and the sample is held for one and one-half hours at this temperature, the desorption of carbon from the surface layer continues until the stability of

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SOTNIKOV, V. G., et al, Fizika tverdogo tela, No. 4, Apr 71, pp 1058-1061

the characteristic energy loss spectrum obtained for the scattering angle of 141° indicates the relative stability of the concentration content of carbon in deep layers of the samples.

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Acc. Nr:

AP0047634

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code:

4R 0057

105091v Negative surface ionization of iodine on single-crystal bands of molybdenum and tungsten. Chalkovskii, E. F.; Mel'nik, L. G.; Pyatigorskii, G. M. (USSR). *Zh. Tekh. Fiz.* 1970, 40(1), 225-8 (Russ). The temp. dependence of the production of I^- was studied in the process of I vapor ionization on heated single-crystal strips of Mo and W used as emitters. Curves are shown for the dependences of ion current on I vapor pressure (10^{-4} - 10^{-1} torr) and on emitter temp. (2300-1400°K). These dependences of the ion current obey the Saha-Langmuir equations. At 10^{-4} torr and 1550°K, a deviation occurs which is due to a change of work function caused by I adsorption.

V. Burjan —

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REEL/FRAME
19791206

18 nt

Semiconductors and Transistors

USSR

UDC 621.315.592

CHAYKOVSKIY, I. A.

"Indirect Multiphoton Transitions in a Quantizing Magnetic Field"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 229-236

Abstract: A study was made of the multiphoton aspect of the problem of indirect magneto-optical transitions. The calculations were performed on the basis of the Keldysh method modified by M. Weiler [N. Weiler, et al., Phys. Rev., No 171, 949, 1968]. Indirect multiphoton transitions were considered with the participation of the lattice phonons in crystals of the Ge and GaP type in the presence of an external quantizing magnetic field. The calculations were performed in two cases: $E \parallel H$ and $E \perp H$ (E is the electric field intensity in the electromagnetic wave and H is the external magnetic field intensity). The conditions under which the probability of indirect l -photon transition can compete with the probability of an $l + r$ -photon direct transition (r is an integer) are indicated.

Formulas for the probability of indirect multiphoton transition w_{nd}^l including the principal peculiarities of this type of transition are derived. In contrast to the probability of the direct transition w_d^l which is characterized by oscillation dependence on the laser frequency, in the case of indirect

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CHAYKOVSKIY, I. A., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 229-236

transitions the dependence of w_{nd}^L on ω for both polarizations has the form of alternating "steps" appearing on a smooth curve during transition to the state with another number of the Landau level n . Other peculiarities of w_{nd}^L by comparison with w_d^L are as follows: a) $w_{nd}^L \sim H \cdot H^{\Delta n}$, and $w_{nd}^L \sim H^2 \cdot H^{\Delta n}$ where $\Delta n = 0$ for $E \parallel H$ and $\Delta n \neq 0$ for $E \perp H$; b) w_{nd}^L is characterized by the selection rule $n_i = n_f$ at the same time as in w_{nd}^L , n_i and n_f can be arbitrary (within the framework of applicability of the effective mass method); c) $w_{nd}^L \sim T$ (for $\hbar\omega_q > k_0T$), and w_{nd}^L does not depend on the temperature. Calculation of the ratio $\nu_0 = w_{nd}^L / w_d^{L+r}$ shows that ν_0 depends strongly on the crystal parameters. However, when the energy L of the laser quanta exactly coincides with the energy required for indirect transition but the energy of the $L + r$ -quanta does not resonate with the energy of the direct transition, the ratio $\nu_0 \geq 1$ is satisfied in a broad range of variation of the semiconductor parameters.

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USSR

UDC: 621.317.725

GORELIKOV, N. I., Candidate of Technical Sciences, GUTSMAN, V. G., Engineer, CHAYKOVSKIY, O. I., Engineer, SHEPTEBAN', R. Z., Engineer

"Digital Comparator Voltmeters"

Moscow, Pribery i Sistemy Upravleniya, No 1, Jan 72, pp 48-49

Abstract: The article describes the F485 and F 486 digital AC voltmeters which operate on the principle of nonsimultaneous comparison of inhomogeneous voltages. The instruments were developed by the cooperative efforts of the Institute of Automation and Electrometry of the Siberian Department of the Academy of Sciences of the USSR and the Special Design Office at the L'vov Electrical Measuring Instrument Plant. A block diagram of the instruments is given, and the operating principle is described. The measurement error in the frequency range from 45 Hz to 20 kHz is no greater than $\pm(0.1 + 0.1V_x/V_f)\%$ for the F485, and $\pm(0.3 + 0.2V_x/V_f)\%$ for the F486, where V_x is the instantaneous value of the measured voltage, and V_f is the

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BERKINBLIT, M. B., DUDZYAVICHYUS, I., KOVALEV, S. A., FOMIN, S. V., KHOLOPOV, A. V., and CHAYLAKHYAN, L. M., Institute of Problems of Information Transmission, Academy of Sciences USSR, Moscow

"Study of the Formation of a Local Response in a Nonuniform Membrane Corresponding to the Hodgkin-Huxley Model"

Moscow, Biofizika, Vol 15, No 5, Sep/Oct 70, pp 873-880

Abstract: The electric response of a model which consists of two membranes regions (one active and the other shunting) connected in parallel is considered. This model imitates biological objects containing membrane regions with a different threshold (e. g., neurons), as well as conditions of non-uniform membrane polarization. The transition is gradual in actual membranes, however. Shifts in the amplitude and duration of the reaction that develops, in the stimulation threshold, and in ionic currents as a result of shifts in the ratio of the excitable to nonexcitable area of the membrane are discussed. On the basis of the model, it is shown that the nonuniformity of the membrane considerably increases the range of strengths of the stimulating current at which a local response develops. The relations obtained

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BERKINBLIT, M. B., et al, Biofizika, Vol 15, No 5, Sep/Oct 70, pp 873-880

explain some characteristics of the electric reactions of smooth muscles and of myocardial tissue.

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USSR

BERKINBLIT, M. B., VVEDENSKAYA, N. D., DUDZYAVICHUS, I., KOVALEV, S. A., FOMIN, S. V., KHOLOPOV, A. V., and CHAYLAKHYAN, L. M. Institute of Problems of Information Transmission, Academy of Sciences USSR, Moscow and Moscow State University imeni M. V. Lomonosov

"Study of Propagation of Excitation in Purkinje Fibers of the Heart Studied in a Mathematical Model"

Moscow, Biofizika, Vol 15, No 3, May/Jun 70, pp 521-527

Abstract: Propagation of the action potential in a uniform Purkinje fiber was modeled on a computer using Noble and McAllister models. The velocity of impulse propagation in the Noble model is shown to be five times lower, and in the McAllister model two times lower, than that measured experimentally. This discrepancy can be explained by the underestimated value of the rate of growth of the forward front of the action potential in the models used, since the calculations showed that the velocity of the impulse propagation to a first approximation linearly depends upon the growth of velocity of the forward front. The action potential in the region of fiber expansion was modeled on the Noble Model. It passes through larger expansions than the impulse in the Hodgkin-Huxley model, apparently because of the more extended time of the heart impulse. It is also shown that geometric nonuniformity can provide a $1/2$

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BERKINBLIT, M. B., et al., Biofizika, Vol 15, No 3, May/Jun 70, pp 521-527

temporary delay in impulse propagation, which comprises a considerable part of atrioventricular delay. It is suggested that the experimentally observed "hollow" and "hump" on the background of the plateau of cardiac action potentials are caused by the electrotonic "reflection" of the potential from geometric nonhomogeneities, since the potentials of such a shape are reproduced in model calculations.

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USSR

UDC 581.143

CHAYLAKHYAN, M. KH., YEFOROVA, T. A., and YANINA, L. I., Institute of Plant
Physiology imeni Timiryazev, USSR Academy of Sciences

"The Effect of Darkness and Retardants on Growth and Blooming of Short-Day
Plants"

Doklady Akademii Nauk Armyanskoy SSR, Vol 51, No 4, 1970, pp 244-249

Abstract: Short-day plants exhibit the characteristic feature that during short days their blooming is stimulated while their growth is inhibited. To investigate the correlation between these two properties, one set of short-day plants was exposed to darkness; a second set was treated with growth retardants; a third set was exposed to darkness and treated with retardants; and a fourth set served as control. All sets included specimens of *Perilla nankinensis*, *Xanthium pennsylvanicum*, *Bidens maximovicziana*, and *Cannabis sativa*, and they were all treated according to a definite schedule. Prolonged exposure to darkness, followed by induction with short days, accelerated blooming in *Perilla*, *Xanthium*, and *Bidens*, but not in *Cannabis*; and it inhibited growth of *Xanthium*, *Bidens*, and *Cannabis*, but not of *Perilla*. Retardants suppressed the growth of all four kinds of plants, but had no effect

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CHAYLAKHYAN, M. KH., et al., Doklady Akademii Nauk Armyanskoy SSR, Vol 51, No 4, 1970, pp 244-249

on their blooming. Thus, there is no direct correlation between growth and blooming processes in short-day plants. Inhibition of growth and stimulation of blooming coincide after exposure to darkness but do not coincide after treatment with retardants. In Perilla, darkness has no effect on growth but stimulates blooming; in Cannabis, darkness and retardants inhibit growth but have no effect on blooming. Apparently, retardants are antagonists of natural gibberellins which do not suppress blooming, while darkness promotes formation of metabolites required for blooming.

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1/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--INFLUENCE OF INOCULATION WITH RHIZOBIA ON THE LEVEL OF GROWTH
REGULATORS IN LEGUMES -U-

AUTHOR--(02)-CHAYLAKHYAN, M.KH., KALADZHYAN, N.L.

COUNTRY OF INFO--USSR

C

SOURCE--BIOL. ZH. ARM. 1970, 23(4), 14-26

DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEGUME CROP, HYDROPONICS, BACTERIA, PLANT CHEMISTRY,
GIBBERRELIC ACID, PROTEIN METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3008/0015

STEP NO--UR/0427/70/023/004/0014/0026

CIRC ACCESSION NO--AP0137214

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137214

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SOYBEANS AND KIDNEY BEANS WERE GROWN IN DISHES, IN STERILIZED SAND, ON A COMPLETE NUTRIENT CONTG. ONLY 25PERCENT OF THE NORMAL N LEVEL. HALF OF THE PLANTS WER INOCULATED WITH AN ACTIVE STRAIN OF RHIZOBIA. THE GROWTH, DEVELOPMENT, AND YIELD OF THE INOCULATED PLANTS WERE GREATER THAN THOSE OF THE NORMAL PLANTS. EXTS. OF THE LEAVES, ROOTS, AND RHIZOMES OF THE PLANTS WERE STUEID BY PAPER CHROMATOG. EXTS. OF THE LEAVES, ROOTS, AND RHIZOMES OF INOCULATED PLANTS CONTAINED LEAVES, ROOTS, AND RHIZOMES OF INOCULATED PLANTS CONTAINED GIBBERELLIN A SUB3, BUT THOSE OF THE NORMAL PLANTS DID NOT. THE EXTS. ALSO CONTAINED AUXINLIKE SUBSTANCES, AND INHIBITORS OF A PHENOLIC NATURE; THE FORMER PREDOMINATED IN INOCULATED PLANTS, BUT NOT IN NORMAL PLANTS. THE IMPROVED GROWTH AND YIELD OF INOCULATED PLANTS WAS CAUSED BY IMPROVED METABOLISM OF NITROGEN AND PROTEIN COMPOS. AND GIBBERELLINS AND AUXINS SYNTHEISZED BY RHIZOBIA OR INDUCED BY THEIR PRESENCE.

FACILITY: INST. MIKROBIOL., EREVAN, USSR.

UNCLASSIFIED

Cytology

USSR

UDC 612.411+612.419:578.085.23

FRIDENSHTEYN, A. Ya., CHAYLAKHYAN, R. K., and LALYKINA, K. S., Laboratory of Immunomorphology, Institute of Epidemiology and Microbiology, Academy of Medical Sciences USSR, Moscow

"Fibroblast-Like Cells in Cultures of Hemopoietic Tissue of Guinea Pigs"

Leningrad, Tsitologiya, Vol 12, No 9, Sep 70, pp 1147-1155

Abstract: Discrete colonies of fibroblast-like cells formed in monolayer cultures of bone marrow and spleen cells of guinea pigs toward the 10th day after explantation. The number of colonies increased linearly with the number of explanted cells. On cultivation of a mixture of equal amounts of spleen cells from males and females, it was found using X and Y chromosomes as markers that every colony constituted an individual clone. Notwithstanding the similar morphological characteristics of fibroblast-like cells in bone marrow and spleen cultures, their potency during implantation was different. Culturing in vivo in diffusion chambers showed that fibroblast-like cells from monolayer bone cultures 25-30 days old formed bone when the density of cells in the diffusion chambers was high enough. On the other hand cells from spleen cultures were incapable of forming bone spontaneously under similar conditions. However, when

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USSR

FRIDENSHTEYN, A. Ya., et al, Tsitologiya, Vol 12, No 9, Sep 70, pp 1147-1155

spleen cells were cultured in the chambers with transitional epithelial cells, which acted as inducers of osteogenesis, bone was formed by fibroblast-like cells from the spleen cultures.

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Acc. Nr: **AP0051929**

Ref. Code: **UR 0219**

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol **69**, Nr **2**, pp **94-98**

CLONE-FORMATION IN MONOLAYERED CULTURES OF THE BONE MARROW AND
THE SPLEEN

R. K. Chaylakhyan, A. Ya. Fridenshteyn, A. V. Vasil'ev

H. F. Gamaleya Institute of Epidemiology and Microbiology, Academy of Medical
Sciences of the USSR, Moscow

In monolayered cultures of the bone marrow and the spleen of guinea pig beginning from the 10th day discrete foci of fibroblast-like cells arose. Two methods were used to elucidate the nature of these foci. Investigation was made of the number of foci per cells fixed to the slide. A chromosome analysis was also carried out on total preparations of the cultures containing a mixture of equal numbers of the spleen cells of males and females.

These investigations indicate that the foci are cell clones, which are in accordance with a linear growth of the number of foci depending on the number of cultured cells.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--DYNAMICS OF THE FIBROBLAST LIKE CELL FORMATION IN BLOOD FORMING
TISSUE CULTURES -U-

AUTHOR--CHAYLAKHYAN, R.K.

COUNTRY OF INFO--USSR

SOURCE--ARKH ANAT GISTOL EMBRIOL 58(3): 75-79. ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE CULTURE, BONE MARROW, SPLEEN, GUINEA PIG, MORPHOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605008/E06 STEP NO--UR/9076/70/058/003/0075/0079

CIRC ACCESSION NO--AP0139999

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139999

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN LONG TERM MONOLAYER CULTURES OF BONE MARROW OR SPLEEN OF GUINEA PIGS THE INITIAL GROWTH OF HISTIOCYTE POPULATION WAS REPLACED BY A MORPHOLOGICALLY DIFFERENT POPULATION OF FIBROBLAST LIKE CELLS. A DISTINCTIVE FEATURE OF THESE CELLS WAS THEIR GROWTH AS ISOLATED DISCREET FOCI, WHERE THEY FORMED A CONTINUOUS SHEET AND COULD GROW IN A SINGLE LAYER OF IN SEVERAL LAYERS AT AN ANGLE TO EACH OTHER. FACILITY: N. F. GAMALEYA INST. EPIDEMIOLOG. MICROBIOL., ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

MEDICINE

Diagnosis

USSR

UDC 616.992.282-031:611.24

CHAYSOVSKAYA, M. M. and ARIYEVICH, A. M., Chair of Tuberculosis, Central Institute for the Advanced Training of Physicians, Moscow

"Symptoms and Diagnosis of Pulmonary Coccidioidomycosis"

Moscow, Klinicheskaya Meditsina, No 12, 1971, pp 52-55

Abstract: The author observed five coccidioidomycosis patients, three with the primary pulmonary form, two with the disseminated or generalized form. Although complicated by the resemblance to tuberculosis, the diagnosis of the disease was based on the absence of *M. tuberculosis* in the sputum and negative tuberculin test, comparatively satisfactory condition and normal temperature of the patients, inflammatory changes in the middle and lower lobes of the lungs visualized on X-rays, isolation of *Coccidioides immitis* from sputum or irrigation fluid from the bronchi, positive complement fixation, agglutination, precipitation, and coccidioidin reactions, and therapeutic response to fungistatic agents, especially the antibiotics amphotericin B and nystatin. Coccidioidomycosis is more common in the Soviet Union than is generally believed, especially the generalized form. An excerpt from the case history of a patient with primary pulmonary coccidioidomycosis is the first such history to appear in the Soviet literature.

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Inorganic Compounds

USSR

UDC 541.11

PRUSAKOV, V. N., SOKOLOV, V. B., and CHAYVANOV, B. B.

"Reaction of Xenon Difluoride with Halogen Pentafluorides"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLV, No 5, 1971, pp 1102-1105

Abstract: The method of differential thermal analysis was used to study the binary systems $\text{XeF}_2\text{-ClF}_5$ and $\text{XeF}_2\text{-BrF}_5$. The experimental technique and the synthesis of XeF_2 and ClF_5 are described. The phase diagram of the $\text{XeF}_2\text{-ClF}_5$ system shows that these components do not react or dissolve in each other and in pure chlorine pentafluoride, a phase transition is observed in the solid state at -134°C . The phase diagram of the $\text{XeF}_2\text{-BrF}_5$ system shows that a congruently melting compound with the composition $\text{XeF}_2\cdot 2\text{BrF}_5$ (dystectic point at 23°C) and one incongruently melting compound with the composition $\text{XeF}_2\cdot 9\text{BrF}_5$ (peritectic point at -37°C) are formed in the system. The phase separation and solution mechanisms are described. The maximum solubility of Xenon difluoride in bromine pentafluoride does not exceed 11.2 moles per 1,000 grams of pentafluoride.

Binary systems of $\text{XeF}_2\text{-IF}_5$, $\text{XeF}_2\text{-BrF}_2$ and $\text{XeF}_2\text{-ClF}_5$ were also studied and the mechanism of formation and dissociation of the compounds $\text{XeF}_2\cdot\text{IF}_5$ and $\text{XeF}_2\cdot 2\text{BrF}_5$ is discussed briefly.

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USSR

YEZHOV, V. K., PRUSAKOV, V. N., and CHAYVANOV, B.B.

UDC: 541:123

"The Physico-Chemical Properties of Heavy Metal Fluoride Mixtures"

Moscow, Atomnaya energiya, Vol 28, No 6, Jun 70, p 497

Abstract: This is the fourth article on the fusibility curve of the xenon difluoride-uranium hexafluoride system. The authors used the differential thermography method for studying the fusibility curve of the $\text{XeF}_2\text{-UF}_6$ system. The obtained diagram shows a mixture with unlimited mutual solubility of the components in the liquid state and crystallization of chemical compounds without solid solution formation. The diagram shows one dystetic point corresponding to the formation of the congruently fusible $\text{XeF}_2\text{-UF}_6$ compound of stoichiometric composition. The melting point of this compound is $120 \pm 5^\circ\text{C}$. An evaluation of the stability of $\text{XeF}_6\text{-UF}_6$ showed that the degree of dissociation of the $\text{XeF}_2\text{-UF}_6$ does not exceed 20 percent within its melting temperature range. A schematic representation of the structure of $\text{XeF}_2\text{-UF}_6$ is given.

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USSR

UDC: 621.374.5(088.8)

CHAZOV, O. A., PLEKHOV, B. V., Sarapul Radio Plant

"A Delay Line"

USSR Author's Certificate No 269988, filed 9 Feb 66, published 26 Aug 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 26320 P)

Translation: This Author's Certificate introduces a delay line made in the form of one or more helical springs which work in the torsional vibration mode. The delay line is equipped with input and output converters. In order to improve the interference resistance of the delay line, its input converter is made in the form of a loop of thin current-conducting wire, the two lateral sides being placed between the polepieces of an E-shaped magnet. The output converter is formed by two parallel placed piezoelectric elements fitted with end shoes and connected by a Y-shaped jumper.

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USSR

CHAZOV, Ye.

"Speed Against Infarct: Labor and Health"

Moscow, Trud, 25 Feb 70, p 4

Abstract: Some 70-80% of the victims of a myocardial infarct die of cardiogenic shock if they are not properly treated within 3-4 hours. Accordingly, the Soviet health system operates on the principle that speed is of the essence in helping the victims. In Moscow and Leningrad, for example, specially trained teams consisting of a cardiologist, paramedic, and orderly are able to reach a patient 12-15 minutes after they are called. Diagnosis is made promptly with a high degree of accuracy, and appropriate treatment is started at the bedside and, continued in the ambulance, if it is deemed necessary that the patient be brought to a hospital. At the hospital a group of physicians take over and treat the patient in specially equipped rooms until he is out of danger and ready to return to work. Besides the organizational measures, the excellent results achieved in training myocardial infarct are also the result of new drugs and devices developed in recent years.

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1/3 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--USE OF ISOENZYMES OF LACTATE DEHYDROGENASE SPECTRA IN THE SERUM IN
THE DIAGNOSIS OF DISEASES OF THE PANCREAS -U-

AUTHOR--(05)-CHAZOV, YE.I., SMIRNOV, V.N., TARSIS, G.B., LITVIN, G.D.,
KANSHIN, N.N.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 23-29

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INTERNAL ORGAN DISEASE, PANCREAS, TUMOR, PANCREATITIS, BLOOD
CHEMISTRY, LACTATE DEHYDROGENASE, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0547

STEP NO--UR/0504/70/042/004/0023/0029

CIRC ACCESSION NO--AP0108763

UNCLASSIFIED

2/3 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108763

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS THE RESULTS OF THE USE OF ISOENZYME SPECTRA OF LACTATE DEHYDROGENASE IN THE BLOOD SERUM FOR DIAGNOSIS OF DISEASES OF THE PANCREAS: HEMORRHAGIC PANCREONECROSIS, CHOLISTOPANCREATITIS, CANCER OF THE PANCREAS. THE AUTHORS USED AN ORIGINAL METHOD OF DIVISION OF ISOENZYMES OF LDG OF THE SERUM IN POLYACRYLAMIDE BLOCKS. DATA CONCERNING THE DYNAMIC CHANGES IN THE ENZYME SPECTRA OF LDG OF THE SERUM FOR PATIENTS WITH THE MENTIONED DISEASES WERE COMPARED WITH THE RESULTS OF DIASTASIS DETERMINATION IN THE SERUM. IT WAS FOUND THAT IN CASE OF HEMORRHAGIC PANCREATITIS A POSITIVE CORRELATION BETWEEN THE GROWTH OF LDG-3 AND LDG-4 CONTENT OF THE SERUM IN POLYACRYLAMIDE BLOCKS. DATA CONCERNING THE DYNAMIC CHANGES IN THE ENZYME SPECTRA OF LDG OF THE SERUM FOR PATIENTS WITH THE MENTIONED DISEASES WERE COMPARED WITH THE RESULTS OF DIASTASIS DETERMINATION IN THE SERUM. IT WAS FOUND THAT IN CASE OF HEMORRHAGIC PANCREATITIS A POSITIVE CORRELATION BETWEEN THE GROWTH OF LDG-3 EXPECTED. AND LDG-4 CONTENT OF THE SERUM AND HIGH FIGURES OF THE BLOOD DIASTASIS. SIMILAR RECONSTRUCTION OF THE ISOENZYME SPECTRUM OF LDG OF THE SERUM WAS NOTED IN THE MAJORITY OF PATIENTS WITH EXACERBATION OF CALCULOUS CHOLECYSTITIS IN NORMAL FIGURES OF THE SERUM DIASTASIS. CONSERVATIVE TREATMENT OF PATIENTS WITH CHOLECYSTOPANCREATITIS AND CHOLYCYSTITIS MAY BRING ABOUT A CHANGE IN THE INITIAL PICTURE OF THE ISOENZYME SPECTRUM. IN CASE OF CANCER OF THE PANCREAS CHANGES IN THE ISOENZYME SPECTRUM OF THE SERUM LDG WERE NOT OBSERVED.

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108763

ABSTRACT/EXTRACT--IT WAS FOUND THAT DETERMINATION OF THE ISOENZYME SPECTRA OF THE SERUM LDG ALLOWS A DIFFERENTIAL DIAGNOSIS OF MYOCARDIAL INFARCTION AND AN ATTACK OF ACUTE PANCREATITIS TO BE MADE. THE AUTHORS ASSUME THAT THE CHANGES IN THE ISOENZYME SPECTRUM OF THE SERUM LDG OBSERVED IN PANCREATITIS AND CHOLECYSTOPANCREATITIS ARE PECULIAR NOT ONLY TO THE DISEASE OF THE PANCREAS. AT THE SAME TIME THE METHOD IS VERY USEFUL IN DIAGNOSIS OF THESE DISEASES AND CAN BE USED FOR THE ASSESSMENT OF THE EFFICACY OF THE THERAPY USED. FACILITY: TSENTRAL'NAYA N-1 LABORATORIYA 4-GO GLAVNOGO UPRAVLENIYA PRI MINISTERSTVE ZDRAVOOKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

1/2 020
TITLE--SPEED AGAINST INFARCT: LABOR AND HEALTH -U- UNCLASSIFIED PROCESSING DATE--09OCT70
AUTHOR--CHAZOV, YE.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, TRUD, 25 FEB 70, P 4
DATE PUBLISHED--25FEB70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART DISEASE, DIAGNOSTIC MEDICINE, CARDIOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1990/1089 STEP NO--UR/9025/70/000/000/0004/0004
CIRC ACCESSION NO--AN0109212
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AN0109212

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME 70-80PERCENT OF THE VICTIMS OF A MYOCARDIAL INFARCT DIE OF CARDIOGENIC SHOCK IF THEY ARE NOT PROPERLY TREATED WITHIN 3-4 HOURS. ACCORDINGLY, THE SOVIET HEALTH SYSTEM OPERATES ON THE PRINCIPLE THAT SPEED IS ONE OF THE ESSENCE IN HELPING THE VICTIMS. IN MOSCOW AND LENINGRAD, FOR EXAMPLE, SPECIALLY TRAINED TEAMS CONSISTING OF A CARDIOLOGIST, PARAMEDIC, AND ORDERLY ARE ABLE TO REACH A PATIENT 12-15 MINUTES AFTER THEY ARE CALLED. DIAGNOSIS IS MADE PROMPTLY WITH A HIGH DEGREE OF ACCURACY, AND APPROPRIATE TREATMENT IS STARTED AT THE BEDSIDE AND, CONTINUED IN THE AMBULANCE, IF IT IS DEEMED NECESSARY THAT THE PATIENT BE BROUGHT TO A HOSPITAL. AT THE HOSPITAL A GROUP OF PHYSICIANS TAKE OVER AND TREAT THE PATIENT IN SPECIALLY EQUIPPED ROOMS UNTIL HE IS OUT OF DANGER AND READY TO RETURN TO WORK. BESIDES THE ORGANIZATIONAL MEASURES, THE EXCELLENT RESULTS ACHIEVED IN TRAINING MYOCARDIAL INFARCT ARE ALSO THE RESULT OF NEW DRUGS AND DEVICES DEVELOPED IN RECENT YEARS.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THE HEMODYNAMICS IN COUNTER PULSATION -U-
AUTHOR-(05)-CHAZOV, YE.I., BOGDOSLOVSKIY, V.A., MAZAYEV, V.P., RUDA, M.YA.,
TRUBETSKOY, A.V.
COUNTRY OF INFO--USSR C
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP
23-30
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART RATE, BLOOD PRESSURE, HEMODYNAMICS

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0642 STEP NO--UR/0481/70/000/002/0023/0030
CIRC ACCESSION NO--AP0108853
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0108853

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNDER THE INFLUENCE OF COUNTER PULSATION THE HEART RATE DROPS SLIGHTLY, THE MAXIMAL AND MEAN SYSTOLIC ARTERIAL PRESSURE DECLINES AND MAXIMAL DIASTOLIC ARTERIAL PRESSURE INCREASES. THE RISE OF THE MEAN DIASTOLIC ARTERIAL PRESSURE WAS LESS MARKED BUT WAS STATISTICALLY SIGNIFICANT. THERE WAS AN ESSENTIAL DROP OF THE TERMINAL DIASTOLIC ARTERIAL PRESSURE AND NO CHANGES OF THE MEAN ARTERIAL PRESSURE. INCREASE OF THE CARDIAC OUTPUT AND ACCELERATION OF THE CIRCULATION RATE WERE INSIGNIFICANT. THE EXTERNAL WORK OF THE LEFT VENTRICLE AGAINST THE BACKGROUND OF COUNTER PULSATION COMPRISED ONLY 84PERCENT FROM THE INITIAL VALUE. THE TIME CONTRACTION INDEX DECREASED BY 24PERCENT. THE GENERAL PERIPHERAL RESISTANCE AGAINST THE BACKGROUND OF ASSISTED PERFUSION MODERATELY DECLINED. THE AUTHORS SHOW THAT A NUMBER OF GENERALLY ACCEPTED INDICES COULD NOT ADEQUATELY REFLECT THE FUNCTIONAL STATE OF THE HEART DURING COUNTER PULSATION. A REGULARITY WAS NOTED THAT THE INFLUENCE OF PERFUSION ON ALL HEMODYNAMIC INDICES BECAME MORE PRONOUNCED SOME TIME AFTER THE BEGINNING OF PERFUSION.

FACILITY: INSTITUT KARDIOLOGII IM. A. L. MYASNIKOVA AMN SSSR, MOSCOW.

UNCLASSIFIED

USSR

UDC: 621.315.582

~~CHEBAN, A. G.~~, NEGRESKUL, V. V., OUSH, P. T., GORCHAK, L. V.,
UNGURYANO, G. I., and SMIRNOV, V. G.

"Solar Elements Using p-GaAs_{1-x}P_x-n-GaAs Heterojunctions"

Tashkent, Geliotekhnika, No 1, 1972, pp 30-33

Abstract: The results of investigations made for determining the volt-ampere, load, and spectral characteristics of heterojunctions made by liquid epitaxial growth of solid solutions of GaAs_{1-x}P_x on a GaAs substrate. The purpose of the research was to estimate the possibilities of using the p-GaAs_{1-x}P_x-n-GaAs system as photoconverters. For the substrate, n-type GaAs with a μ of 2500-3500 cm²/V·sec and an electron concentration of $7 \cdot 10^{16}$ to $4 \cdot 10^{17}$ per cc was used. The crystals of the material were oriented in the (111) plane and were covered by a solution of gallium containing dissolved GaP; the doping impurity was zinc, in a pure hydrogen atmosphere. Crystal growth was made in a temperature range of 760-910° C. Curves are plotted for the volt-ampere characteristic, the load characteristic, and the spectral distribution of the vapor collection coefficient for the heterojunctions. The basic advantage of the materials is that, in the form of solar elements, they can be used for operation at temperatures above 200° C, with an increase in the utilization percentage of the solar spectral energy.

1/2 Q28 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THEORY OF FINE SURFACE STATES IN SILICON AND GERMANIUM -U-

AUTHOR--PREPELITSA, B.V., CHEBAN, A.G., KARP, I.A., SKUTELNICHUK, I.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 528-32

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SEMICONDUCTOR MATERIAL, SILICON, GERMANIUM, ELECTRON
STRUCTURE, SURFACE PROPERTY, CRYSTAL IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0642

STEP NO--UR/0368/70/012/003/0528/0532

CIRC ACCESSION NO--AP0107239

UNCLASSIFIED

2/E 028

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107239

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APPROXN. METHOD FOR EFFECTIVE MASS VARIATION IN SEMICONDUCTORS WAS STUDIED BY USING ENERGY CALCNS. OF THE 1ST 3 ELECTRON STATES FOR FINE DONOR IMPURITY CENTERS LOCALIZED CLOSE TO THE SEMICONDUCTOR SURFACE. BY USING DERIVED FORMULAS, THE ENERGY, E , AND VARIATION PARAMETERS A AND B WERE CALCD. FOR GE AND SI. BECAUSE OF THE APPROXNS. MADE, THE RESULTS APPLY NOT TO REAL CRYSTALS OF SI AND GE, BUT TO IDEALIZED SEMICONDUCTORS WITH AN ANISOTROPIC TENSOR EFFECTIVE MASS OF THE SI AND GE TYPE. SINCE THE PRECISE CALCN. OF THE REAL SURFACE STATE PRESENTS CONSIDERABLE DIFFICULTIES, IT IS CONCLUDED THAT THE APPROACH USED REPRESENTS A REASONABLE APPROXN.

UNCLASSIFIED

USSR

UDC 576.858.25.095.15

CHEBAN, D. S., and KITSACK, V. YA., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Changes in Some Biological Properties of Sindbis Virus as a Result of Long-Term Passages at Low Temperatures"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 72, pp 451-453

Abstract: The reproduction of Sindbis virus and its cold-adapted form, P-40, obtained from the initial form by 50 passages through 2-4-day mice in the presence of progressively decreasing temperature, was studied. The behavior of these viruses in *Ae. aegypti*, and their pathogenicity to white mice were compared. At low temperatures (19 and 27°C) the maximum titer of P-40 virus in chick fibroblast culture was 1,000 times lower than that of Sindbis virus, but it was attained sooner by P-40 than Sindbis virus (6 and 10 hours respectively at 27°C). At 37°C the viruses had identical reproduction rates, but the titer of P-40 virus was lower. The lengths of the latent phase and exponential growth phase of the viruses increased with decreasing temperature. Although no differences were noted in the accumulation and survival of the viruses in mosquitos, Sindbis virus was able to penetrate the intestinal wall and enter the salivary glands, while P-40 had lost this property. Consequently only

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USSR

CHEBAN, D. S. and KITSACK, V. YA., Voprosy Virusologii, No 4, Jul/Aug 72,
pp 451-453

mosquitoes infected with Sindbis virus were able to transmit the pathogen to white mice. Thus low-temperature mutants of Sindbis virus lose their ability to circulate in nature by transmission.

2/2

USSR

UDC 536.21

BERMAN, N. R., IOYSHER, A. M., and CHEBAN, V. G.

"The Problem of Dynamic Heat Conductivity of a Hollow Cylinder"

Kishinev, Izvestiya Akademii Nauk Moldavskoy SSR -- Seriya Fizikotekhnicheskikh i Matematicheskikh Nauk, No 2, 1972, pp 3-10

Abstract: The problem of a nonstationary temperature field with no phase transitions is considered under the condition that the thermophysical parameters of the medium and the cylinder material are independent of the temperature. This cylinder is assumed to be hollow and semibounded, and is drawn into an oven whose temperature is maintained constant; the rate at which the cylinder is drawn into the oven is also constant. It is assumed that the outer and inner surfaces of the cylinder have specified boundary value conditions of the third kind and that the initial temperature distribution is determined by the solution of the stationary problem at zero velocity of the cylinder. The problem is divided into three stages: determining the initial temperature; solving for the transient heating mode; and finally, examining the quasi-stationary state. It is noted that the solutions here obtained can be used for describing the surface tempering of tubes, the cooling of glass tubes during the casting of miniaturized conductors, and other technical processes.

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USSR

UDC 539.3 : 534.1

CHEBAN, V. G.

"Calculation of Some Quantities to Be Determined in Solving the Problem of the Elastic Impact of a Quarter Space Against a Rigid Immobile Obstacle"

Kishinev, Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 3, 1971, pp 22-29

Abstract: An earlier article by the author considered the problem of the elastic impact of a quarter space against a rigid immobile obstacle. An analytic solution of this problem was found in the dimensionless variables

$\xi = \frac{x}{at}$, $\eta = \frac{y}{at}$. The present article gives the computer-aided calculation of the volume and shear strain functions, as well as the displacements occurring during impact. The wave pattern of the motion of this problem is shown, in two regions of which the motion is one-dimensional and in one region two-dimensional. The solution is given for the free boundary and each region of the quarter plane. The results of the calculations are shown in the form of graphs.

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USSR

UDC 576.85(478)

MARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., ELKIS, K. U., KORNES, R. V., BELYAYEVA, N. S., CHEBAN, Ye. D., KOTSEFAN, A. S., DOBRUSKINA, S. V., GURCHIOGLUYANTS, L. V., and MIKHAYLOVA, A. A., Moldavian Scientific Research Institute of Hygiene and Epidemiology and Kishinev Sanitary Epidemiological Station

"Fermentation Reaction Types and Colicinogenic Properties of Shigella Sonnei Circulating in the City of Kishinev, and Determining Their Sensitivity to Antibiotics"

Kishinev, Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Abstract: The Shigella sonnei strain accounted for 97.9-99 percent of the cases of dysentery in Kishinev in 1968-70. The object of this study was to identify the types of fermentation reactions of Shigella sonnei isolated in 1968-70 (4,507 cultures), and to study their colicinogenic properties and sensitivity to antibiotics. Shigella bacilli isolated from victims in 1968 were found to be primarily fermentation type II (71.4 percent); in 1969-70, type I bacilli predominated (66.4-94.1 percent); Shigella type III was most frequently isolated from the healthy. The results of studies on colicin production showed that, of 922 cultures, 842 were inactive with respect to E. coli K-12 and E. coli B and ϕ ; 76 cultures were colicin type K-12; 4, colicin type ϕ .

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USSR

MARITS, A. A., et al., Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Among the K-12 type cultures, 54 percent were fermentation type I; 44.8 percent were type II; and 1.2 percent were type III. The cultures isolated in 1969 exhibited a gradual decrease of strains sensitive to levomycetin, and a growing number of strains sensitive to neomycin and monomycin.

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USSR

UDC 616.935:576.3

MARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., ~~ELIOTS, M. H.~~, BELYAYEVA, N. S., CHEBAN Ye. D., KOTSEFAN, A. S., KORNES, R. B., DOLETSCHINA, S. V., GURCHISCHENKIS, L. V., and MIGAYLOVA, A. A., Moldavian Scientific Research Institute of Hygiene and Epidemiology, and Kishinev Sanitary Epidemiological Station

"Enzymatic Types of Sonnei Dysentery Pathogens Circulating in Kishinev"

Kishinev, Zdravookhraneniye, No 3, May/June 1970, pp 48-49

Abstract: The number of Sh. Sonnei strains isolated in Kishinev in 1968 was more than four times greater than in 1959. Many healthy individuals are carriers of these bacteria. A total of 1,714 cultures of Shigella Sonnei were investigated to determine their morphological, peptolytic, antigenic, and other properties, including their ability to ferment sugars to acids. Pathogens were classified into three enzymatic types. Type I -- cultures ferment rhamnose within the first 24 hours of incubation at 37°C, but do not ferment xylose for a week; type II -- cultures ferment rhamnose with a delay (after three to four days), or do not ferment either rhamnose or xylose; type III -- cultures ferment both sugars within the first 24 hours. Of the 1,714 cultures investigated, 71.4% belonged to type II, 21.5% to type I, and 7.1% to type III. The tests are fairly easy and can be performed in routine clinical laboratories.

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AA 0043546

CHEBANENKO

UR 0482

V.P.

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243231 FATIGUE TESTING MACHINE for flexible components provides rapid effects in the interest of productivity by the use of two drums studded with percussive elements which alternately strike a flexible test piece held between them. The diagram shows the two drums 5 held in the main frame 2, driven by belt 3 from a motor, and having cams 6 disposed on some chosen pitch circle diameter on both of them. The flexible test piece 7 is held by straining gear 1 in a position where alternate percussive bending by the cams takes place.

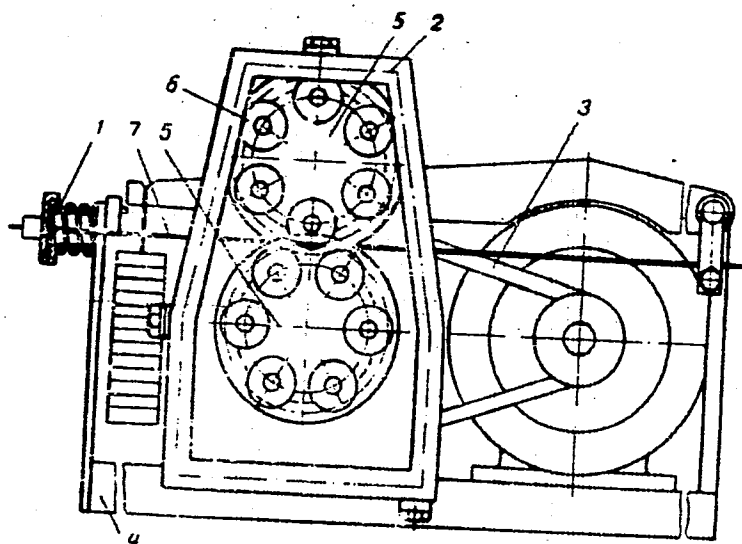
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USSR

UDC 002.6:001.18

AVERBUKH, V. M., BUTRIMOVICH, V. V., and CHEBANOV, O. P.

"Information Activity and Questions in Forecasting"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2: Informatsionnyye Protsessy i Sistemy, No 8, 1971, pp 5-7

Abstract: The activity of information services in forecast compilation consists of two principal stages: viz., (1) the identification and gathering of information materials, and (2) the analytico-synthetic processing of these materials and the compilation of informative surveys of several sources and comparative surveys. The principal information sources used for survey preparation are original, survey, and analytical articles; house organs and advertising publications; descriptions of inventions for patents and author's certificates; special publications (official materials, reports on foreign assignments, and other analogous materials); conference and symposium proceedings; current-awareness and abstract publications.

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USSR

AVERBUKH, V. M., et al., Nauchno-Tekhnicheskaya Informatsiya, Seriya 2: Informatsionnyye Protsessy i Sistemy, No 8, 1971, pp 5-7

and the possibility of their effect on the sector under study; statistical analysis of the opinions of the most competent specialists; analysis of variations in the production volume of products (materials); study and analysis of conference and exhibit materials etc.; study and analysis of market conditions and economic ties between companies; analysis of patent and license agreements; cooperation with scientific establishments and higher educational institutions of the country.

Preliminary work on the compilation of comparative surveys includes organizing and keeping several card files: viz., a company file, author file, product file, and material file. The company file set up by the authors of the article is arranged by country, then alphabetically by company names within the country. Names of Japanese companies are transcribed into English. Each company is given a separate punch card. The information on the card includes company name in the language of the original (except for Japanese),

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USSR

AVERBUKH, V. M., et al., Nauchno-Tekhnicheskaya Informatsiya, Seriya 2: Informatsionnyye Protsessy i Sistemy, No 8, 1971, pp 5-7

address, capital, head of the company, appropriations for research and development work, branches and divisions, principal clients, economic and financial data, publications. The author file uses standard punch cards and includes biographical data (birth, education, employment record) and a list of works with coauthors and publication date. On the basis of all these card files, a comparative survey meeting the requirements of completeness of information and reliability can be compiled.

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USSR

UDC 576.6+576.895.42+576.851.71

AVAKYAN, A. A., SIDOROV, V. Ye., and CHEBANOV, S. M., Gamaleya Institute of Epidemiology and Microbiology, USSR Academy of Medical Sciences, Moscow

"Electron-Microscopic Study of Intracellular Symbiosis of Rickettsia-Like Symbionts and Argasid Ticks"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 3, 1973, pp 707-710

Abstract: Study of the ultrastructural organization of rickettsia-like symbionts of the genus Wolbachia (obligate inhabitants of cells in tick ovaries, Malpighian tubules, and other organs) in several tick species (*Alveonassus lahorensis* Neumann, *Argas persicus* Oken, and *Ornithodoros papillipes* Birulia) showed that the developmental cycle of the symbionts in all three tick species consists of three stages: (a) reproduction, (b) conservation, and (c) activation. The size of the symbiont population is regulated by the host in all stages of their combined existence. The number of symbionts increases after the ticks feed, but the former pass through the initial stage (binary fission) in only a comparatively few cells that contain cavities in which new parasite colonies can form; the bulk of the population remains in the conservation stage. Fasting the

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USSR

AVAKYAN, A. A., et al., Doklady Akademii Nauk SSSR, Vol 211, No 3, 1973, pp 707-710

ticks results in a steady decrease in the number of symbionts, as shown by the appearance and subsequent increase in colonies with degenerating symbionts. Thus, the numbers of the symbionts-mutualists remain under the host's control and never reach the level that might threaten its life.

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Entomology

USSR

UDC 576.895.2.086.12

GERANOV, S. M., and SIDOROV, V. Ye., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"A Device for Processing and Embedding Several Preoriented Blood-Sucking Arthropod Organs in Epoxy Resins"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 41, No 1, Jan/Feb 72, pp 113-114

Abstract: This device takes advantage of the fact that organs placed on a gelatin film tend to remain fixed in place. It consists of a 26 mm square mold box 5 mm high with walls 1 mm thick. It is partitioned into 5 rectangular sections by walls 4 mm high, which can in turn be subdivided into 2-3 more sections with transverse walls 1.5 mm high. After acetone treatment and rinsing, the box is dipped in 1-2% gelatin-water solution, excess is removed, and it is allowed to dry. Organs removed from ticks in Hank's solution under a stereomicroscope are oriented on the gelatin floor of one section with a minimum quantity of fluid. The section is then filled with fixing fluid, after which the organ sticks permanently to the gelatin while all subsequent treatment and embedding operations are carried out. The box can be reused, or employed to store embedded specimens.

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USSR

UDC 621.319.4

GOL'DBERG, I. L., CHEBONENKO, L. I., VAYSBERG, I. I., ZYKOV, V. S.

"A Method of Making Film Capacitors"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288153, class 21, filed 14 Sep 68, published 3 Dec 70, p 85

Translation: This Author's Certificate introduces a method of making film capacitors with fixed capacitance. The capacitors contain a multilayered dielectric in the form of oxides produced by the method of vacuum deposition. As a distinguishing feature of the patent, the specific capacitance, working voltage and percent yield of usable capacitors are increased by using successively deposited layers of silicon monoxide and germanium monoxide as the oxides.

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1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ACETATE COMPLEXES OF CERIUM, PRASEODYMIUM, AND NEODYMIUM IN WATER
ETHANOL SOLUTIONS -U-
AUTHOR-(02)-MIGAL, P.K., CHEBOTAR, N.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1218-23
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ACETATE, CERIUM COMPOUND, PRASEODYMIUM COMPOUND, NEODYMIUM
COMPOUND, COMPLEX COMPOUND, POTENTIOMETRIC TITRATION, CHEMICAL
SEPARATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0767 STEP NO--UR/0078/70/015/005/1218/1223
CIRC ACCESSION NO--AP0136204
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136204

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEXING OF TERVALENT CE, PR, AND ND WITH ACO PRIMENEGATIVE WAS STUDIED POTENTIOMETRICALLY IN AQ. ETOH SOLNS., CONTG. 0-80 WT. PERCENT ETOH. STABILITY CONSTS. OF THE FORMED COMPLEXES (LN(ACO) SUBN PRIME3-N ARE TABULATED. ON GOING FROM LA TO ND INHIBITION OF THE FORMATION OF ACETATE COMPLEX PPTS. WAS OBSERVED. THIS PHENOMENON MAY BE USED FOR SEPG. LA, CE, AND PR FROM ND AS WELL AS OTHER LANTHAMIDES AND ALSO FOR SEPG. MIXTS. OF LA, CE, AND PR INTO THE SEP. ELEMENTS. FACILITY: KISHINEV. GOS. UNIV., KISHINEV, USSR.

UNCLASSIFIED

Radiation Chemistry

USSR

UDC 669.017:539.16.04

KORZO, V. F., and CHEBOTARENKO, V. Ya., Moscow

"Radiation Stimulated Conductivity of Quasimorphic Layers of the Pyrolytic Chromium Alloyed With Carbon"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, 1973, pp 34-37

Abstract: A change in electric characteristics has been noted in quasimorphic layers of pyrolytic chromium alloyed with atomic carbon during the process of the self-decomposition of the agents caused by irradiation with a stream of thermal neutrons. As the concentration of the neutron stream increases from 10^{13} to $5 \cdot 10^{16}$ n/cm⁻², the films of the alloy chromium suddenly change their conductivity by several orders of magnitude. The nonlinear characteristics of the conductivity after annealing is related to the appearance of electrically active capture centers in the alloy chromium structure due to the presence of quasimorphic chromium and alloyed carbon atoms in the matrix.

1/1

Converters

USSR

UDC: 621.314.26;621.372.543.3(088.8)

BURIN, L. I., CHEBOTAREV, A. I.

"A Transistorized Cascode Frequency Converter"

USSR Author's Certificate No 270001, filed 15 Jul 68, published 4 Aug 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D52 P)

Translation: This Author's Certificate introduces a frequency converter based on transistors (e. g. in a common-emitter - common-base circuit). The converter contains a filter made up of a system of series-connected parallel tanks and a resistor. To suppress oscillations with frequencies of the signal and heterodyne with practically no reduction in the transmission ratio of the converter on the intermediate frequency, the above mentioned filter is connected in series between the collector of the first transistor and the emitter of the second, the filter resistor being connected in parallel with the output of the first transistor.

1/1

USSR

UDC: 621.396.7(088.8)

CHEBOTAREV, A. V., Design and Planning Office for Instrument Building

"A Device for Forming a Call Signal"

USSR Author's Certificate No 262197, filed 2 Oct 67, published 3 Jun 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D391 P)

Translation: This Author's Certificate introduces a device for forming a call signal. The unit contains a pulse distributor for the digits of the subscriber's number, pulse counters with as many decoders as the number of digits in the subscriber's number, a code frequency selector module and a code frequency oscillator module. To simplify the device and improve its operational reliability, the decoder outputs are connected in parallel to the inputs of the code frequency selection module. The decoder supply lines are connected to the outputs of the pulse supply unit, and its controlling input is connected to the pulse distributor for the digits of the subscriber's number. V. P.

1/1

USSR

UDC: 621.374.32

GRINEVICH, P. B. CHEBOTAREV, A. Y.

"A Reversible Binary-Digital Counter"

USSR Author's Certificate No 249103, filed 14 May 62, published 21 Jan 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11,
Nov 70, Abstract No 11A43 P)

Translation: This Author's Certificate introduces a reversible binary-digital counter which contains flip-flops and AND and OR circuits. To simplify the circuit while realizing 1-2-4-2 code, one of the outputs of the first flip-flop for the tetrad is connected to one of the inputs of the fourth flip-flop, whose outputs with zero and one potential in the initial state are connected respectively to one of the inputs of the second and third flip-flops, and to the interlock key for the input of the second flip-flop. One illustration. V. M.

1/1

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USSR

UDC: 621.317.733.011

CHEBOTAREV, A. V., NIKITENKO, L. T.

"Autocompensation AC Transformer Bridges for Measuring Impedances"

V sb. Vopr. elektrosvyazi (Problems of Electrical Communications--collection of works), Kiev, "Tekhnika", 1970, pp 145-152 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A372)

Translation: The authors discuss devices for automatically measuring impedance parameters, capacitance and loss tangent, inductance, Q. Two self-compensation bridge measurement circuits are described. The conditions of equilibrium for the measurement circuits are determined, and recommendations are given on their technical realization. One illustration, bibliography of four titles. Resumé.

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- 75 -

USSR

KRYUCHKOV, A.S., and CHEBOTAREV, M.V., Ministry of Geology USSR

"Development of the Mineral-Raw Material Basis of Non-Ferrous Metallurgy in the 8th Five-Year Plan"

Moscow, Razvedka i okhrana nedr, No 5, May 71, pp 5-10

Abstract: This article presents an account of the results of surveys and prospecting conducted in the USSR during the 8th Five-Year Plan, for widening the present mineral base and uncovering new deposits of copper, lead, zinc, nickel, bauxites, tin, tungsten, mercury, and antimony. New goals in the coming Five-Year Plan for increasing production (1.4 times) of non-ferrous metallurgy are established on the basis of these results. It is stated in the conclusion that widening the scope of geological works in regions of operating mining enterprises and in regions with favorable economic conditions is the main problem of geological organizations. An intensification of prospecting for high-quality bauxite and the most important non-ferrous and rare metals is planned. Particular attention will be given to prospecting for lead, tungsten, and mercury deposits.

1/1

USSR

UDC 546.45'226-162.32,542.336

VASIL'YEV, V. G., YERSHOVA, Z. V., UTKINA, O. N., and CHEBOTAREV, N. T.

"Dehydration of Beryllium Sulfate Tetrahydrate"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, Vyp 3, 1972, pp 625-630

Abstract: The mechanics of the dehydration of $\text{BeSO}_4 \cdot 4\text{H}_2\text{O}$ were followed at temperatures of 25 - 340°C and pressures of 1 - 760 torr by thermogravimetry, x-ray, and differential thermal analysis. The hydrated salt can lose one, two, three, or four of the water molecules resulting in the formation of the tri-, di-, monohydrate, or anhydride, respectively. Solid solutions such as $\text{BeSO}_4 \cdot \text{H}_2\text{O} + \text{BeSO}_4$ were present under certain conditions. The structure of the tri- and tetrahydrate changes for the di- and monohydrate impeding the overall dehydration reaction. The heats of dehydration for the reactions $\text{BeSO}_4 \cdot 4\text{H}_2\text{O} \longrightarrow \text{BeSO}_4 \cdot 2\text{H}_2\text{O}$; $\text{BeSO}_4 \cdot 4\text{H}_2\text{O} \longrightarrow \text{BeSO}_4 \cdot 3\text{H}_2\text{O}$; and $\text{BeSO}_4 \cdot 2\text{H}_2\text{O}$

$\longrightarrow \text{BeSO}_4 \cdot \text{H}_2\text{O}$ are equal to 25.8, 13.5, and 15.0 kcal/mole respectively.

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USSR

VASIL'YEV, V. G., et al., Zhurnal Neorganicheskoy Khimii, Vol 17, Vyp 3, 1972, pp 625-630

Energies of activation for the same reactions are 8.6, 15.0, and 18.4 and kcal/mole as determined from thermogravimetry and 9.0, 14.0, and 19.5 kcal/mole as determined from differential thermal analysis.

2/2

USSR

UDC: 621.396.9:527.629.78

CHEBOTAREV, R. P., SIDORIN, V. N., POLUSHKIN, G. A., BIBARSOV, R. Sh.,
ISAMUDDINOV, Sh. O., KOLMAKOV, V. M.

"A Set of Equipment for Radar Studies of Meteors in Dushanbe"

Byul. In-ta astrofiz. AN Tadzh. SSR (Bulletin of the Institute of Astrophysics of the Academy of Sciences of Tadzhik SSR), 1970, No 55, pp 24-28
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G94)

Translation: The authors describe a set of equipment for measuring the wind in the upper atmosphere in the IQSY program at the Institute of Astrophysics of the Academy of Sciences of the Tadzhik SSR. The equipment is designed for determining coordinates, altitudes, radiants and velocities of meteors, and for studying the physics of meteors and of the upper atmosphere. Data are given in brief for operation of the equipment complex. Resumé.

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USSR

UDC 621.396.677.71

SHUBARIN, YU. V., CHEBOTAREV, V. I.

"Polarization Diagram of Slot Waveguide Radiators with Controllable Polarization"

Antennofidern. i izmerit. ustroystva sverkhvysok. chastot -- V sb (Superhigh-Frequency Antenna Feeder and Measuring Devices -- Collection of Works), Khar'kov, Khar'kov University, 1971, pp 3-10 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10B28)

Translation: A study was made of the lattice of diagonal slots which were cut in the wide wall of a rectangular waveguide excited by a H_{01} wave from both ends. The polarization diagram of this antenna is controlled by varying the ratio of the amplitudes and phase difference of the waves exciting the waveguide. The field in the far zone is found by means of the vectorized Kirchhoff integral. It is demonstrated that the system has two partial phase centers corresponding to excitation of the waveguide from the right and left. An expression is obtained for determining the distance of the phase centers to the axis passing through the centers of the slots. The dependencies of this distance on the polar angle are presented for a nine-element lattice of diagonal

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USSR

SHUBARIN, YU. V., et al., Antennofidern. i izmerit. ustroystva sverkhvysok. chastot, Khar'kov, Khar'kov University, 1971, pp 3-10

radiators with an identical radiation factor. The variation of the polarization characteristics of the field within the limits of the main lobe of the direction-
alness diagram for given polarization in the direction of the main peak is determined by the coordinates of the partial phase centers of radiation of the lattice. It is noted that the results obtained for a one-dimensional system are also valid for a two-dimensional system. There are 4 illustrations and a 2-entry bibliography.

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USSR

UDC: 621.372.8

CHEBOTAREV, V. I.

"Slotted Controlled-Polarization Radiators With Square and Circular Waveguides"

Kiev, Izvestiya VUZ -- Radioelektronika, Vol. 13, No. 9, 1970, pp 1055-1061

Abstract: This article deals with antenna gratings in which crossed longitudinal and transverse slots cut into square and circular waveguides are excited by waves with orthogonal polarization planes. The amplitude and phase of these waves are controlled by varying the polarization of the slots' radiation. This article shows that the difference in conductivity of the longitudinal and transverse slots and the diffraction of the waves on the cylindrical surface of the waveguide strongly influence the polarization diagrams of the radiators, and strictly limit the possibility of one method of polarization control. The author begins his calculations with an equation connecting

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the polarization diagram for any system of two slots on a surface, determined by the ratio of the orthogonally polarized field components in the far zone, and the ratio of complex voltages at the slots. A second equation of similar form connecting the polarization diagram and the parameters of the field polarization ellipse is also given. These equations are combined, and from the resultant calculation an equation is obtained for control curves through which the complex wave amplitude ratio in the waveguide required to obtain the desired polarization in a given direction of the field can be determined. The coefficients in this equation are determined for a square waveguide with crossed slots excited by H_{01} and H_{10} waves. A similar analysis is conducted for waveguides of circular cross section. It is found that the difference in conductivity of the longitudinal and transverse slots and the change in effects in the amplitude ratio and phase difference of the waves passing through the waveguide limits the use of such radiators as elements in an antenna grating with a single waveguide.

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USSR

UDC 621.396.677.71

CHEBOTAREV, V. I.

"Calculating the Parameters of Slot Antennas with Circular Polarization"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 138-144 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B36)

Translation: The energy method of calculating the distribution of the radiation coefficients of slot antennas with circular polarization by the given amplitude distribution is described.

1/1

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USSR

UDC 621.396.677

CHEBOTAREV, V. I.

"Two-Dimensional Frequency Rocking of the Beam of an Array of Directional Radiators"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 145-148 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B32)

Translation: A two-dimensional array of horn radiators providing for frequency rocking of the beam with respect to the type of television scanning is investigated. There are 3 illustrations and a 3-entry bibliography.

1/1

- 13 -

172 008 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ATTACHMENT TO A POTENTIOMETER FOR SIMULTANEOUS TITRATION WITH
SEVERAL INDICATOR ELECTRODES -U-
AUTHOR-(03)-DIGNISYEV, V.D., CHEBOTAREV, V.K., IVANOVA, Z.I.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(3), 280-1 C
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRODE POTENTIAL, POTENTIOMETRIC TITRATION, CHEMICAL
LABORATORY APPARATUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1960 STEP NO--UR/0032/70/036/003/0280/0281
CIRC ACCESSION NO--AP0132221
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132221

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. THE DEVICE DESCRIBED IN DETAIL IS ESSENTIALLY A MULTIPOLE DOUBLE THROW SWITCH WHICH ALLOWS THE DETN. OF THE POTENTIAL OF ALL THE INDICATOR ELECTRODES AT EACH POINT OF THE TITRN.; TO DET. THE SUITABILITY OF ANY ONE ELECTRODE IN THE COURSE OF ONE TITRA. AND TO DET. THE JUMP IN POTENTIAL AND THE CORRESPONDING EQUIVALENCE POINT. FACILITY: ROSTOV. GOS. UNIV., ROSTOV, USSR.

UNCLASSIFIED

USSR

UDC 533.9.07

KALMYKOV, A. A., TERESHIN, V. I., CHEBOTAREV, V. V., KHIZHNYAK, N. A. and
LYSENKO, O. YE.

"Calculation of Plasmoid Motion in an Axially Symmetric, Spatially Periodic,
Alternating Magnetic Field"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol. 40, No. 3, Mar 70, pp 466-474

Abstract: The motion of a plasmoid in a magnetic field produced by a system of coils with mutually opposing currents is considered. The analysis is conducted within the framework of the integral model of a small bunch, considering the effects of dissipation and the gas kinetic pressure. The paper is an extension of experimental work in which stabilization and focusing of a plasma moving in a spatially periodic, alternating, axially symmetric magnetic field was first observed. The equations of motion were integrated on a computer for different parameters of the plasmoid. The following conclusions were drawn from the computations: 1. The initial velocity of the plasmoid is the basic parameter affecting the passage of plasmoids through the system. 2. For large initial velocities there exists an interval of values of the ratio N/H_0^2 under which passage of the plasmoid through the system is observed. As the initial velocity increases,

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USSR

KALMYKOV, A. A., et al, Zhurnal tekhnicheskoy fiziki, Vol. 40, No. 3, Mar 70, pp 466-474

the N/H_0^2 interval broadens. 3. Upon reflection of the plasmoids the plasma is captured in the magnetic cell with subsequent emission through the magnetic slit. 4. When bunches with good conductivity pass through the system, currents are induced in them which fully compensate the applied magnetic field so that there is no field inside the plasmoid. 5. When plasmoids with poor conductivity pass through the system, a shift in phase occurs between the magnetic field and the induced current. In this case the magnetic field penetrates the plasmoid. 6. Plasmoids with poor conductivity undergo a strong retardation in the system which is proportional to the phase shift between the magnetic field and the induced current. Preliminary analysis shows that these results are in good agreement with experimental data of the authors but a more complete comparison will require more detailed experiments. This work is currently being conducted and the results will be published. The interest of B. G. Safronov in this work is acknowledged.

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1/3 039

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--CALCULATION OF PLASMOID MOTION IN AN AXIALLY SYMMETR'C, SPATIALLY PERIODIC, ALTERNATING MAGNETIC FIELD -U-

AUTHOR--(05)-KALMYKOV, A.A., TERESHIN, V.I., CHEBOTAREV, V.V., KHIZHNYAK, N.A., LYSENKO, O.YE.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, ZHURNAL TEKHICHESKOY FIZIKI, VOL. 40, NO. 3, MAR 70, PP 466-474

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMOID, PLASMA FLOW, MOTION EQUATION, COMPUTER CALCULATION, VELOCITY DISTRIBUTION, MAGNETIC FIELD EFFECT, PLASMA CONDUCTIVITY, MAGNETIC PERMEABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3004/1351

STEP NO--UR/0057/70/040/003/0466/0474

CIRC ACCESSION NO--AP0131782

UNCLASSIFIED

2/3 039

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131782

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE MOTION OF A PLASMOID IN A MAGNETIC FIELD PRODUCED BY A SYSTEM OF COILS WITH MUTUALLY OPPOSING CURRENTS IS CONSIDERED. THE ANALYSIS IS CONDUCTED WITHIN THE FRAMEWORK OF THE INTEGRAL MODEL OF A SMALL BUNCH, CONSIDERING THE EFFECTS OF DISSIPATION AND THE GAS KINETIC PRESSURE. THE PAPER IS AN EXTENSION OF EXPERIMENTAL WORK IN WHICH STABILIZATION AND FOCUSING OF A PLASMA MOVING IN A SPATIALLY PERIODIC, ALTERNATING, AXIALLY SYMMETRIC MAGNETIC FIELD WAS FIRST OBSERVED. THE EQUATIONS OF MOTION WERE INTEGRATED ON A COMPUTER FOR DIFFERENT PARAMETERS OF THE PLASMOID. THE FOLLOWING CONCLUSIONS WERE DRAWN FROM THE COMPUTATIONS: 1. THE INITIAL VELOCITY OF THE PLASMOID IS THE BASIC PARAMETER EFFECTING THE PASSAGE OF PLASMOIDS THROUGH THE SYSTEM. 2. FOR LARGE INITIAL VELOCITIES THERE EXISTS AN INTERVAL OF VALUES OF THE RATIO $N-H \text{ PRIME}^2 \text{ SUBO}$ UNDER WHICH PASSAGE OF THE PLASMOID THROUGH THE SYSTEM IS OBSERVED. AS THE INITIAL VELOCITY INCREASES, THE $N-H \text{ PRIME}^2 \text{ SUBO}$ INTERVAL BROADENS. 3. UPON REFLECTION OF THE PLASMOIDS THE PLASMA IS CAPTURED IN THE MAGNETIC CELL WITH SUBSEQUENT EMISSION THROUGH THE MAGNETIC SLIT. 4. WHEN BUNCHES WITH GOOD CONDUCTIVITY PASS THROUGH THE SYSTEM, CURRENTS ARE INDUCED IN THEM WHICH FULLY COMPENSATE THE APPLIED MAGNETIC FIELD SO THAT THERE IS NO FIELD INSIDE THE PLASMOID. 5. WHEN PLASMOIDS WITH POOR CONDUCTIVITY PASS THROUGH THE SYSTEM, A SHIFT IN PHASE OCCURS BETWEEN THE MAGNETIC FIELD AND THE INDUCED CURRENT. IN THIS CASE THE MAGNETIC FIELD PENETRATES THE PLASMOID. 6.

UNCLASSIFIED

3/3 039

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131782

ABSTRACT/EXTRACT--PASMIDS WITH POOR CONDUCTIVITY UNDERGO A STRONG RETARDATION IN THE SYSTEM WHICH IS PROPORTIONAL TO THE PHASE SHIFT BETWEEN THE MAGNETIC FIELD AND THE INDUCED CURRENT. PRELIMINARY ANALYSIS SHOWS THAT THESE RESULTS ARE IN GOOD AGREEMENT WITH EXPERIMENTAL DATA OF THE AUTHORS BUT A MORE COMPLETE COMPARISON WILL REQUIRE MORE DETAILED EXPERIMENTS. THIS WORK IS CURRENTLY BEING CONDUCTED AND THE RESULTS WILL BE PUBLISHED.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--VERTICAL DISTRIBUTION OF HETEROTROPHIC BACTERIA IN THE OPEN DEEP
WATER REGIONS OF THE BAIKAL LAKE -U-
AUTHOR--(02)-KRISO, A.YE., CHEBOTAREV, YE.I.
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 146-148
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BACTERIA, MARINE BIOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1403 STEP NO--UR/0220/70/039/001/0146/0148
CIRC ACCESSION NO--AP0109465
UNCLASSIFIED

2/2 010
CIRC ACCESSION NO--AP0109465

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NUMBER OF HETEROTROPHIC BACTERIA WAS DETERMINED AT VARIOUS DEPTH FROM BOTTOM TO SURFACE AT SIX DEEP WATER STATIONS IN NORTHERN, SOUTHERN, AND MIDDLE REGIONS OF THE BAIKAL LAKE. AMONG 86 SAMPLES 65PERCENT CONTAINED 1-9 BACTERIA, 14PERCENT 10-83 BACTERIA AND 21PERCENT CONTAINED NO BACTERIA PER 40 ML WATER. HETEROTROPHIC BACTERIA WERE DISTRIBUTED IN WATER IN MICROZONAL FASHION BOTH VERTICALLY AND HORIZONTALLY; HIGH BACTERIAL NUMBERS AND ZERO VALUES WERE FOUND BOTH AT THE SURFACE AND AT THE BOTTOM.

UNCLASSIFIED

USSR

UDC: 577.1:578

CHEBOTAREV, Ye. Ye., RABOVA, E. Z., INDYK, V. M.

"Antiradiation Properties of DNA in the Case of Neutron Exposure"

V sb. Biofizika i radiobiol. (Biophysics and Radiobiology-- collection of works), vyp. 3, Kiev, "Nauk. dumka", 1972, pp 74-79 (from RZh-Biologicheskaya Khimiya, No 12, Jun 72, Abstract No 12F2353)

Translation: The antiradiation properties of hetero-, homo- and isologic DNA, as well as products of thermal denaturation and enzymatic hydrolysis of DNA were studied on a Saccharomyce vini yeast culture. The corresponding solutions of DNA were exposed to fast neutrons in a dose of 10 kilorads (LD₅₀; the dose rate was 10-12 rads/min). It was found that the shielding properties of DNA do not depend on the degree of isologism and polymerism of its operators. The shielding action disappeared completely only when the DNA was broken down to its nitrogen bases. Possible mechanisms for the antiradiation action of DNA are discussed.

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- 60 -

Acc. Nr: AP0051908

Ref. Code: UR04K

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 2, pp 42-45

RENAL FUNCTION IN PATIENTS WITH THYROTOXICOSIS BEFORE
AND FOLLOWING RADIOIODINE THERAPY

E. D. Chebotareva, I. G. Gerinshteyn (Kharkov)

Renal function in patients with thyrotoxicosis before and after radioiodine therapy was studied in 57 patients by hemorenal tests and in 77 by radioisotope renography.

Renal changes have been found manifested in disturbances of the local hemodynamics and slowing down of the processes of excretion and secretion.

Radioiodine treatment did not lead to normalization of renal function and in some instances an increase of the renal vascular resistance and deterioration of the secretory-excretory function was observed.

REEL/FRA
19820391

USSR

UDC 541.124+541.127+661.718.1

CHEBOTAREVA, E. G., POBEDIMSKII, D. G., KOLUBAKINA, N. S., MUKMENEVA, N. A.,
KIRPICHNIKOU, P. A., AKHMADULLINA, A. G., Kazan Chemical Technology Institute
imeni S. M. Kirova

"Kinetics of Reaction of Phosphites With Cumol Hydroperoxide"

Moscow, Russian, Kinetika i kataliz, Vol 14, No 4, Jun-Aug 73, pp 891-895

Abstract: The kinetics were studied and the rate constants determined for the reaction of various aliphatic and aromatic phosphites with cumol hydroperoxide in benzene. The rate constants did not change with a reaction rate change of 4 orders of magnitude, which indicates the absence of kinetic bonds. The reaction was first order with respect to each component. The aromatic phosphites were less reactive than the aliphatic, possibly because of polar effects. Analysis of the data on competition between the phosphite-hydroperoxide reactions and the spontaneous disintegration of hydroperoxides at 200°C in molten polymers indicated that phosphites suppress confluent branching.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--USE OF SOME POLYESTERS OF TEREPHTHALIC ACID OF ORDERED STRUCTURE IN
PROTECTIVE COATINGS -U-
AUTHOR-(02)-SOROKIN, M.F., CHEBOTAREVA, N.A.
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1), 1-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYESTER RESIN, PHTHALATE, ESTERIFICATION, OLIGOMER,
POLYCONDENSATION, PHTHALIC ANHYDRIDE, GLYCOL, ISOCYANATE, LACQUER,
ADHESION STRENGTH, ELECTRIC RESISTANCE, PROTECTIVE COATING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0692 STEP NO--UR/0303/70/000/001/0001/0003
CIRC ACCESSION NO--AP0119600
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119600

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSESTERIFICATION OF DI-ME TEREPHTHALATE (I) WITH 6 EQUIVS. HOCH SUB2 CH SUB2 OH GAVE BIS(2-HYDROXYETHYL) TEREPHTHALATE (III). THE TRANSESTERIFICATION OF I WITH 2 EQUIVS. HOCH SUB2 CH SUB2 OH GAVE AN OLIGOMER (III). THE POLYCONDENSATION OF II OR III WITH PHTHALIC ANHYDRIDE GAVE AN ORDERED AND A PARTLY CRYST. OR AMORPHOUS POLYESTER, RESP. OTHER ORDERED POLYESTERS WERE PREPD. BY CONDENSING II WITH ADIPIC OR SEBACIC ANHYDRIDES. MIXTS. OF THESE POLYESTERS WITH A BLOCKED ISOCYANATE (M. F. SOKOKIN, ET AL., 1967) DISSOLVED IN ETOAC WERE USED AS LACQUERS FOR COATING METALS. THESE LACQUERS WERE HARDENED TO A GLOSSY FILM BY HEATING TO 260DEGREES. THE COATINGS ARE QUIV. TO EPOXY COATINGS, HAVING GOOD ADHESION AND HIGH SURFACE ELEC. RESISTANCE (0.5-1.08) TIMES 10 PRIME14 OHMS.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CONCERNING THE INTERCONNECTION BETWEEN THE INTRACRANIAL AND VENOUS
PRESSURE -U-
AUTHOR--CHEBOTAREVA, N.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSKOVA, 1970,
VOL 70, NR 5, PP 685-689
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INTRACRANIAL PRESSURE, BLOOD PRESSURE, CARDIOVASCULAR SYSTEM
DISEASE, RESPIRATORY SYSTEM DISEASE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0235 STEP NO--UR/0246/70/070/005/0685/0689
CIRC ACCESSION NO--AP0117487
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117487

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DEALS WITH THE CORRELATIONS BETWEEN THE INTRACRANIAL PRESSURE, THE CHANGES OF THE VENOUS PRESSURE AND ITS RELATION TO THE CHANGED INTRACRANIAL PRESSURE. THESE DATA ARE BEING DISCUSSED ON THE BASIS OF LITERATURE DATA AND PERSONAL ANIMAL EXPERIMENTS. THE CONCEPT OF THE EXISTENCE OF UNIDIRECTIONAL CHANGES OF THE INTRACRANIAL PRESSURE IN A CHANGED VENOUS PRESSURE WAS CONFIRMED. THE AUTHOR SHOWS A TEMPORARY DISTORTION OF THESE CORRELATIONS, DIVERSELY DIRECTED CHANGES OF THE VENOUS AND INTRACRANIAL PRESSURE DURING THE INTRODUCTION OF UREA OR MANNITE, AS A RESULT OF BRAIN DEHYDRATATION. IT WAS ALSO POSSIBLE TO CONFIRM AN ABSENCE OF SIGNIFICANT CHANGES OF THE VENOUS PRESSURE IN CHANGED INTRACRANIAL PRESSURE IN THE DIRECTION OF ITS DROP OR NORMAL LEVEL AND IN ITS INCREASE IN CERTAIN LIMITS, EXCLUDING CARDIODRESPIRATORY DISORDERS. FACILITY: INSTITUT NEVROLOGII AMN SSSR, MOSCOW.

UNCLASSIFIED

Acc. Nr: **AP0047163****CHEBOTAREVA****N.M.**

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhatrii, 1970,
Vol 70, Nr 2, pp 177-181

**MATHEMATICAL PROGNOSIS OF OUTCOMES IN HEMORRHAGIC
STROKES WITH THE PURPOSE OF DETERMINING
INDICATIONS TO SURGICAL TREATMENT**

Gelfand, I. M.; Guberman, S. A.; Izvekova, M. L.;
Kandel', E. I.; Lebedeva, N. V.; Lunev, D. K.;
Nikolayeva, I. F.; Chebotareva, N. M.

The purpose of the convened study was to elaborate methods of mathematical prognosis in hemorrhagic strokes to define the indications to surgical treatment. The authors analyzed 124 case histories (52 case histories of living patients and 72 case histories of deceased) with hemorrhages into the brain hemisphere, following hypertensive disease and atherosclerosis. In such cases 56 items were considered which were the most significant for prognosing hemorrhagic strokes. Among them were different clinical symptoms and their development during 12 hours after admission to hospitals. An analysis of these items permitted to establish a correct prognosis in relation to survival during the first 5 days with exactness to 95%. The next stage of the study presumes an elaboration of methods for prognosis of hemorrhagic strokes in surgical treatment. This may be of aid in deciding the expediency of operations in each separate case.

REEL/FRAME
19790657

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DETERMINATION OF SELENIUM AND TELLURIUM ACCORDING TO ION MOBILITY
-U-
AUTHOR--(03)--KONSTANTINOV, B.P., OSHURKOVA, O.V., CHEBOTAREVA, N.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 544-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SELENIUM, TELLURIUM, ION, METAL CHEMICAL ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1061 STEP NO--UR/0080/70/043/003/0544/0548
CIRC ACCESSION NO--AP0123054
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123054

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDITIONS OF THE IONS SEPN. ACCORDING TO THE ION MOBILITY ARE DISCUSSED. THE EXPTL. APP. CONSISTS OF TWO ELECTROLYTIC VESSELS FITTED WITH PT ELECTRODES AND JOINED BY A HORIZONTAL CAPILLARY BRIDGE (LENGTH 18-25 CM, CAPILLARY BORE 0.1-0.3 MM). THE SAMPLE IS ELECTROLYZED IN THE CAPILLARY BRIDGE FOR 4 HR AT 1 MA. THE COMPLETE SEPN. OF SEO SUB3 PRIME2NEGATIVE AND TED SUB3 PRIME2NEGATIVE IONS WAS ATTAINED BY USING 4N KCL AS ANOLYTE AND 1.8N NA SALICYLATE PLUS 0.07N NAOH CATHOLYTE. THE SEO SUB3 PRIME2NEGATIVE AND TED SUB3 PRIME2NEGATIVE ARE DETD. BY DIVISIONS ON "SHADOW PICTURES".
FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 616.9-053.2-084.47-06-091+615.371/.372.065

LEVENBINK, I. S., CHEBOTAREVA, S. V., and CHERTKOVA, F. A., Control Institute of Biomedical Preparations imeni Tarasevich

"Clinical and Anatomical Analysis of Some Postvaccinal Complications in Children"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 55-59

Abstract: Study of the case histories, autopsy findings, and results of histological examinations of 20 children under 3-1/2 years of age who died after receiving inoculations of associated whooping cough -- diphtheria -- tetanus vaccines, diphtheria-tetanus or diphtheria toxoids showed that most of them had been vaccinated against a background of some chronic or acute disease (bronchitis, enterocolitis, pneumonia, etc.). Death occurred within 10 hours to 2 days in 15 children, within 7 to 13 days in four, and almost immediately in one as a result of anaphylactic shock. Death was generally preceded by symptoms of encephalopathy. In three cases where the presence of prevaccination disease could not be determined, there were references in the case histories to constitutional anomalies, including allergic diathesis and spasmophilia.

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Organometallic Compounds

USSR

UDC 541.49:547.1'118:546.92:546.98

KOLOMNIKOV, I. S., KUKOLEV, V. P., CHEBOTAREVA, T. D., and VOL'PIN, M. YE.,
Institute of Metalorganic Compounds, Acad. of Sc., USSR

"Triphenylphosphine Carboxyl Complexes of Platinum and Palladium"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73,
pp 946-947

Abstract: Carboxyl complexes of platinum and palladium with the composition $(\text{Ph}_3\text{P})_2\text{M}(\text{OOCR})_2$ have been obtained by reacting organic acids with $(\text{Ph}_3\text{P})_4\text{Pt}$ and $(\text{Ph}_3\text{P})_4\text{Pd}$ complexes. In contrast to the platinum complexes, the palladium products were highly unstable.

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USSR

UDC 669.295:539.125.5

CHEBOTAREVA, YE. S. and NUZHINA, S. G., Institute of High Pressure Physics,
Academy of Sciences USSR

"Observation of Omega-Titanium in a Composite Alloy on a Fine-Crystalline Diamond
Base"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 205-207

Abstract: A structural analysis of the content of the crystal components of a composite alloy, made on a base of synthetic fine-crystalline diamonds was conducted at a pressure of 40 kbar and temperature of 1200° C for the purpose of determining the existence of omega-titanium when titanium was used as one of the binding components in the alloy. Diffraction neutronography was used to provide data on the varying role of inclusions in the composite alloy. A comparison was made of calculated interplanar distances and integral intensities with the results of neutronogram processing from which it was possible to make a conclusion about the formation of the omega-Ti phase in the aprocess of producing the composite alloy. The authors thank R. A. ALIKHANOV, A. A. SEMERCHAN, and V. P. MODEBOV for advice and V. N. ULANOV for help with the experiment. One figure, one table, eight bibliographic references.

1/1

USSR

CHEBOTAREVA-SERGEYEVA, L. I.

Skaty (Skates), Moscow, "Znaniye," 1971, 48 pp

Translation: Skates and sharks belong to an ancient group of fish which have continued to live right up to our time. They were the first vertebrates populating the primeval oceans of the earth. It is very important for contemporary science to know the previous history of higher animals and evolutionary paths.

The structure, physiology, mode of life and reproduction of the most interesting representatives of skates and their close relatives are related.

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What the Skate Is Like	4
The Purse of the Water-Nymphs	14
Dwarfs and Giants	21
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USSR

CHEBOTAREVA-SERGEYEVA, L. I., Skaty (Skates), Moscow, "Znaniye," 1971, 48 pp

Sea Radar

Brothers and Sisters

Recommended bibliography

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48

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--NEW EPOXY POLYAMIDE PRIME COATS AND ENAMELS -U-
AUTHOR--(04)-CHEBOTARVESKIY, V.V., YESELEV, A.D., SMIRNOVA, L.I., GABIRUV,
I.Z.
COUNTRY OF INFO--USSR
SOURCE--LAKKRASOCH. MATER. IKH. PRIMEN. 1970, (1), 22-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ENAMEL, PROTECTIVE COATING, EPOXY RESIN, PAINT, GASOLINE,
KEROSENE, FERTILIZER, THERMAL STABILITY, CHEMICAL STABILITY/(U)EP076
PRIMER, (U)EP140 ENAMEL, (U)EP076T PAINT, (U)PD200 PAINT RESIN, (U)EP09T
COATING, (U)A63A PRIMER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0554 STEP NO--UR/0303/70/000/001/0022/0025
CIRC ACCESSION NO--AP0107159
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0107159

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMULATIONS WERE DEVELOPED FOR EPOXY RESIN POLYAMIDE EP-076 PRIMER (I) AND EP-140 ENAMEL (II). I WAS COMPOSED OF EP-076T PAINT AND HARDENER NO. 2 (III) (A 30PERCENT PD-200 RESIN SOLN.) WHICH WERE BLENDED IN 75:25 RATIO JUST PRIOR TO APPLICATION; II WAS ALSO COMPOSED OF A PAINT AND III, AND WAS AVAILABLE IN A VARIETY OF COLORS. THE 2 COATINGS HAD SIMILAR PHYSICOMECH. PROPERTIES, BUT I (DUE TO THE SPECIFIC STRUCTURE OF POLYAMIDES) WAS INTERNALLY PLASTICIZED, WHICH MARKEDLY IMPROVED ITS THERMAL STABILITY AND AGING RESISTANCE. A 4 YEAR STUDY OF II APPLIED OVER AN AG-3A PRIMER SUGGESTED THAT THE FORMER EXHIBITED GOOD WEATHERABILITY AND RESISTANCE TO GASOLINE, KEROSENE, NH SUB4 OH, AND VARIOUS DETERGENTS. II CAN BE EFFECTIVELY USED AS A PROTECTIVE COATING IN PLANTS MANUFG. N FERTILIZERS. I COATINGS WERE MARKEDLY MORE PROCESSABLE THAN EP-09T COATING AND HAD SUPERIOR HARDNESS, THERMAL STABILITY, AND OIL RESISTANCE.

UNCLASSIFIED

USSR

CHEBOTAR'OV, E. Yu., Doctor of Medical Sciences, GRODZINS'KIY, D. M., Doctor of Biological Sciences, BARABOY, V. A., Candidate of Medical Sciences, and KIRICHINS'KIY, B. R., Candidate of Legal Sciences

"Radiobiology in the Ukraine"

Kiev, Vestnik Akademii Nauk Ukrainskoy SSR, No 9, Sep 70, pp 48-52

Abstract: A survey is presented of the leading Ukrainian research institutes and the achievements of the major Ukrainian scientists. Ukrainian radiobiologists are conducting a wide variety of investigations on a high scientific and methodological level. Fundamental contributions are being made to such important problems as the biological effects of fast neutrons; mechanisms of radioprotection of animals and plants; repair of lesions caused by radiation; migration, incorporation, and effects of natural and artificial radioactive isotopes; and primary mechanisms of the injurious effects of ionizing radiation on biopolymers, mainly proteins. Extensive use is being made of radiospectroscopy, X-ray diffraction analysis, gas chromatography, and physicochemical studies of model systems.

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1/2 : 018 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--A MIGHTY ACCELERATOR OF THE SCIENTIFIC TECHNICAL PROGRESS -U-
AUTHOR--(05)--ANDRUNAKIYEVICH, V., GONTSA, M., ZAYTSEV, G., GAMETSKIY, A.
CHEBOTARU, A.
COUNTRY OF INFO--USSR
SOURCE--SOVETSKAYA MOLDAVIYA, JULY 2, 1970, P 2
DATE PUBLISHED--02JUL70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--COMPUTER R AND D, COMPUTER CENTER, ELECTRONIC COMPUTER/(U)BESM
4 DIGITAL COMPUTER, (U)M20 COMPUTER, (U)M220 COMPUTER, (U)BESM 3M
COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0812

STEP NO--UR/9021/70/000/000/0002/0002

CIRC ACCESSION NO--AN0111995
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--0900Y70

CIRC ACCESSION NO--AN0111995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FIVE ARTICLES PUBLISHED UNDER ONE TITLE ARE DEALING WITH THE STATE OF THE COMPUTER ART IN THE MOLDAVIAN REPUBLIC IN GENERAL, AND THE COMPUTATION CENTER OF THE MOLDAVIAN ACADEMY OF SCIENCES IN PARTICULAR. SOME TIME DURING 1970, THE COMPUTATION CENTER ACQUIRED A BESM 4 ELECTRONIC COMPUTER. IT IS THE SECOND GENERATION TRANSISTORIZED COMPUTER WITH THE MEMORY CAPABLE OF STORING 8,000 NUMBERS. IN ADDITION IT HAS THE EXTERNAL MEMORY CAPACITY CONSISTING OF 8 MAGNETIC DRUMS AND 4 MAGNETIC TAPES WITH THE TOTAL STORAGE CAPACITY OF 4,131,072 NUMBERS. THE COMPUTER CAN PERFORM 20,000 OPERATIONS PER SECOND AND HAS A LIBRARY OF STANDARD PROGRAMS WHICH WERE COMPILES FOR M-20, BESM 3M, AND M 220 COMPUTERS.

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